

$\{f_{\text{max}}^{(1)}, \dots, f_{\text{max}}^{(n)}\}$  and  $\{f_{\text{min}}^{(1)}, \dots, f_{\text{min}}^{(n)}\}$  are the maximum and minimum values of the fitness function  $f$  over the search space  $S$ . The fitness function  $f$  is a scalar-valued function that maps a point in the search space to a real number. The fitness function  $f$  is used to evaluate the quality of a solution. The fitness function  $f$  is a scalar-valued function that maps a point in the search space to a real number. The fitness function  $f$  is used to evaluate the quality of a solution.

The invention is directed to isolated protein fragments of p62 nucleoporin including deletion isoforms and nucleic acid sequences encoding these deletion isoforms. The isolated deletion isoforms disclosed herein include the sequences: SEQ. ID NO.:1 MSGFNFGGTG APTGGFTFGT AKTATTTTPAT GFSFSTSGTG GFNFGAPFQP ATSTPSTGLF SLATQTPATQ TTGFTFGTAT LASGGTGFSL GIGASKLNLS NTAATPAMAN PSGFGLGSSN LTNAISSTVT SSQGTAPTGF VFGPSTTSVA PATTSGGFSF TGGSTAQPSG FNIGSAGNSA QPTAPATLPF TPATPAATTA GATQPAAPT TATITSTGPS LFASIATAPT SSATTGLSLC TPVTTAGAPT AGTQGFSLKA PGAASGTSTT TSTAATATAT TTTSSSTTGF ALNLKPLAPA GIPSNTAAAV TAPPGPGAAA GAAASSAMTY AQLESLINKW SLELEDQERH FLQQATQVNA WDRTLIENGE KITSLHREVE KVKLDQKRLD QEL; SEQ ID NO.:2 LINKWSLELE DQERHFLQQA TQVNAWDRTL IENGEKITSL HREVEKVKLD QKRLDQELDF ILSQQKELED LLSPLEELVK EQRATIY LQH ADEERQKTYK LAENIDAQLK RMAQDLKDII EHLNTSGAPA DTSDPLQQIC KILNAHMSL QWIDQNSALL QRKVEEVTKV CVGRRKEQER SFRITFD. The invention is also directed to peptides which are at least 80% identical over their entire amino acid sequence set forth in SEQ ID NO:1, and SEQ ID NO:2 and salts thereof. Pharmaceutical compositions including the polypeptides, their isoforms, and methods for their use activating target genes are also provided.